ABSTRACT

An apparatus and a method to estimate the channel response for a set of subcarriers in an OFDM receiver. The receiver receives a packet of information that includes a known transmitted part having known subcarrier values. The receiver has a signal-to-tone transformer, e.g., an FFT unit, to determine the subcarriers of a signal corresponding to a received packet. For each subcarrier, the method stores a function of an initial estimate of the channel response for the subcarrier, and accepts a pre-decision constellation point value for the subcarrier. The pre-decision constellation point value is a post channel correction using the first estimate of the channel response. The method includes: makes a decision using the pre-decision constellation point value, re-modulates the decision to form a post-decision constellation point value, and forms a complex valued product of the function of the first estimate for the subcarrier and the complex-valued ratio of the pre-decision and post-decision values. This complex valued product forms a measure of the current channel estimate to use for updating the stored quantity.